ASIF UZZAMAN

Artificial Intelligence & Autonomous Driving Systems Engineer | New Energy & Software System Integration

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Nationality:Bangladesh Birthday:1999-01-01 Gender:Male

ABOUT ME

Driven by a deep passion for modern software architecture and the development of intelligent systems, I am determined to pursue a Ph.D. that integrates software engineering principles with cutting-edge artificial intelligence and autonomous driving technologies. My academic background reflects rigor and continuous upward progress: I have consistently maintained an average score above 85 and ranked among the top international students for two consecutive years—4th in the 2023–2024 academic year and 1st in 2024–2025.In terms of professional and research experience, I have been involved in scalable system development, application optimization, and research on quantum software architecture and human–machine collaborative software design. These experiences have further strengthened my ambition to solve complex, high-impact problems at the intersection of artificial intelligence and software engineering. According to my GoogleScholar profile, my research work has received 29 citations, In ResearchGate a Research Interest Score of 55.5, reflecting both its academic value and its growing influence.During my Ph.D. studies, I plan to further focus on core software challenges in large-scale intelligent systems and to develop innovative, practically deployable intelligent and automated system solutions. In particular, I aim to explore the deep integration of advanced software architectures with new-energy systems in autonomous vehicles, emphasizing energy-aware intelligence, system optimization, and collaborative control. At the same time, I am committed to producing research with strong theoretical foundations, promoting the mutual advancement of academic knowledge and real-world technological capability.

RESEARCH INTERESTS

1. Solar-Integrated Fast-Charging Architecture for Smart Electric Vehicle Fleets

“My simulation model presents a solar-to-EV energy conversion system that powers roadside fast-charging stations. It focuses on efficiently capturing, regulating, and converting solar energy to deliver stable power for high-speed charging.”

2. Software-Defined Carbon-Aware Energy Management for Battery Swapping Stations in New Energy Vehicle Networks

“Lightweight software modules enable NIO/CATL battery-swapping stations to perform real-time carbon accounting and AI-based emission tracking for each swap, supporting automatic reporting and optimization under China’s carbon trading system.”

3. AI-Driven Vehicle-Grid Interactive Energy Management Platform for Smart Electric Vehicle Fleets

“This AI-driven platform uses machine learning and optimization to control EV charging and discharging, reduce costs, and maximize renewable energy use, enabling vehicle fleets to operate as a smart, flexible energy resource for the grid.”

4. Quantum-Heuristic Optimization for Real-Time Energy Management in Microgrids for Multi-Mode Autonomous Vehicles

“This project uses quantum-heuristic algorithms to optimize real-time energy flow in microgrids for autonomous vehicles, balancing batteries, solar, and grid power to improve efficiency, stability, and sustainability.”

EDUCATION

Hubei University of Automotive Technology | September 2023 – June 2026 Shiyan, Hubei, China

Master of Engineering in Artificial Intelligence and Intelligent Connected Vehicles

Research and Practice focused on intelligent connected vehicles, integrating computer science and automotive engineering. Achieved excellent performance (92/100) in AI-based vehicle perception and control system projects, gaining strong theoretical knowledge and practical experience in machine learning, autonomous driving, vehicle electronics, and software development. Well prepared for research and industry roles in intelligent vehicles, autonomous systems, and new-energy applications.

Wuzhou University | March 2018 – January 2022 Wuzhou, Guangxi, China

Bachelor of Engineering in Computer Science and Technology

Completed a comprehensive curriculum covering computer science fundamentals, software engineering, web development, and Chinese language studies, with an average score of 74. Developed solid practical skills through coursework and projects in programming, databases, operating systems, networks, and web/mobile application development.

WORK EXPERIENCE

IT Solution &.com Ltd| August 2022 – August 2023 Dhaka, Bangladesh

Network and Database Developer

- Designed, developed, and maintained dynamic web applications using HTML, JavaScript, PHP, and Java.
- Built and managed relational databases (MySQL) for secure data storage and retrieval.
- Implemented responsive, user-friendly front-end interfaces.
- Developed server-side logic and APIs for data processing and system integration.
- Optimized database queries and web applications to improve performance, reliability, and scalability.

Online Tech Academy | March 2021 – September 2022 Dhaka, Bangladesh

Head of Web and Technical Marketing

- Planned and executed international marketing campaigns for IT courses, web development training, and entrepreneurship programs.
- Provided technical guidance in web development, computer applications, and digital platforms.
- Delivered training in IT, Facebook technologies, and web development to improve practical skills.
- Coordinated with international teams to expand the academy's global reach and attract new learners.
- Assisted in developing digital course content, learning materials, and technical documentation for online and offline programs.

AWARDS AND HONORS

- Full Scholarship for Master's Program with Monthly Living Allowance – Hubei University of Automotive Technology (Shiyan, China)
- Ranked Top 4 among all International Students, Academic Year 2023–2024
- Ranked 1st among all International Students, Academic Year 2024–2025
- Recipient of the "Best Outstanding Student" Award, Academic Year 2024–2025
- First Prize Winner in Chinese Language Competition

PROJECT EXPERIENCE

1. Development of a Hybrid Deep Learning Model (DeepLabV++ + UNet) for Lane Detection in Autonomous Vehicles – Lead Model Developer

This project developed a robust lane-detection system for autonomous vehicles using a hybrid DeepLabV++ and UNet architecture. By combining the strengths of both models, it improved lane recognition accuracy, particularly under challenging conditions such as low light, occlusion, and complex road surfaces.

2. Intelligent Control in Autonomous Vehicle Braking Systems

This project developed a real-time safety system combining YOLOv12-based vehicle detection with MPC-based ABS to optimize braking performance. The system achieved fast, accurate perception and significantly improved braking distance and vehicle stability in complex traffic conditions.

3. AI-Driven Microgrid Solutions for Enhancing Energy Access and Reliability in Rural and Remote Areas

This project investigated AI-based microgrid systems to improve energy access and reliability in rural and remote regions. The study focused on applying machine learning and optimization algorithms to manage distributed energy resources such as solar, wind, and battery storage, ensuring stable, efficient, and sustainable power supply where conventional grid coverage is limited.

4. Testing Autonomous Vehicles in Virtual Environments

This project explored simulation-based testing methods for autonomous vehicles using virtual environments to evaluate perception, decision-making, and control systems. The approach enables safe, repeatable, and cost-effective validation of autonomous driving performance under complex traffic, weather, and road conditions without the risks associated with real-world testing.

PUBLICATIONS

1.Testing Autonomous Vehicles in Virtual Environments: A Review of Simulation Tools and Techniques DOI: 10.59247/csol.v3i2.196 – Published May 2025

2.Review on the Safety and Sustainability of Autonomous Vehicles: Challenges and Future Directions DOI: 10.59247/csol.v3i1.185 – Published April 2025

3.A Comprehensive Review of Environmental and Economic Impacts of Autonomous Vehicles
DOI: 10.59247/csol.v2i3.131 – Published November 2024

4.Bio-Inspired Hybrid Control for Autonomous Vehicles: Improving Real-Time Navigation through the Integration of ACO and PSO
DOI: 10.59247/csol.v3i3.204 – Published July 2025

5.AI-Driven Microgrid Solutions for Enhancing Energy Access and Reliability in Rural and Remote Areas: A Comprehensive Review
DOI: 10.59247/csol.v3i1.183 – Published April 2025

6.Lane Road Segmentation Based on Improved Hybrid Architecture for Autonomous Driving
Submitted to Frontiers in Energy (ISSN: 2095-1701)

7.Intelligent Control in Autonomous Vehicle Braking Systems
Submitted to Journal of Intelligent Systems and Applied Data Science (JISADS) ISSN (Online): 2974-9840

SKILLS

Technical Skills:

Python, OpenCV, TensorFlow, HTML, JavaScript, Autonomous Driving, Computer Vision, Deep Learning, Machine Learning, Data Structures, Simulation

Troubleshooting Skills:

Experience in diagnosing and repairing computer hardware and software issues

Mathematics Skills:

Linear Algebra and Applications, Boolean Algebra, Calculus, Probability and Statistics, Discrete Mathematics

Development Tools:

NetBeans, Microsoft Visual Studio, XAMPP/WAMP/ORACLE, PyCharm, Android Studio, Adobe Dreamweaver, SQL, Servers, CodeBlocks

Research Tools:

EndNote, Zotero, Scopus, Dropbox, Overleaf (LaTeX), MAXQDA, Draw.io, GitHub, GitLab, Zenodo

Operating Systems:

Windows (11, 10, 8, 7), Windows XP, Windows 98, Linux

Business & Management:

International Sales, Contract Negotiation, Digital Marketing, Supply Chain Management

Languages:

English (Fluent), Chinese (Intermediate), Hindi/Urdu (Fluent), Bengali (Native)

REFERENCES

Current Supervisor:

Dr. Benchang Wei (David)
Professor, Department of Automotive Technology and New Energy, Hubei University of Automotive Technology
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Course instructor

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